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Federal Communications Commission
Office of Secretary

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)

Cellular Service and Other Commercial)
Mobile Radio Services in the Gulf of)
Mexico)

WT Docket No. 97-112

Amendment of Part 22 of the Commission's)
Rules to Provide for Filing and)
Processing of Applications for Unserved)
Areas in the Cellular Service and to)
Modify Other Cellular Rules)

CC Docket No. 90-6

To: The Commission

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COMMENTS OF NEXTEL COMMUNICATIONS, INC.

NEXTEL COMMUNICATIONS, INC.

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Dated: June 2, 1997

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COMMENTS OF NEXTEL COMMUNICATIONS, INC.

I. INTRODUCTION

Pursuant to Section 1.415 of the Rules and Regulations of the Federal Communications Commission ("Commission"), Nextel Communications, Inc. ("Nextel") respectfully submits these Comments on the Commission's Second Further Notice Of Proposed Rule Making ("Notice") in the above-referenced proceeding.^{1/}

In the Notice, the Commission seeks comment on its proposal to license cellular services, Personal Communications Services ("PCS") and 800 MHz and 900 MHz Specialized Mobile Radio ("SMR") services on a geographic area basis in the Gulf of Mexico. The Commission proposes a Coastal Zone (from the shore to a point 12 miles into the Gulf) and an Exclusive Zone (from the 12-mile point to the southern edge of the Gulf of Mexico cellular service area) for cellular service, and queries whether these same geographic areas should be applied to PCS, and 800 MHz and 900 MHz SMR services.

^{1/} Second Further Notice Of Proposed Rule Making, FCC 97-110, released April 16, 1997.

Currently, the Commission licenses 800 MHz SMR operations in the Gulf on a site-by-site basis. The Commission's records indicate that there are approximately 100 800 MHz systems licensed in the Gulf today.

Nextel is a leading 800 MHz and 900 MHz SMR licensee and holds numerous licenses in areas near the Gulf Of Mexico. Nextel's Comments herein address issues relating only to the proposed 800 MHz and 900 MHz SMR licensing in the Gulf.

II. DISCUSSION

The Commission historically has licensed SMR systems on a site-by-site basis and applied strict interference criteria, e.g., co-channel separation, limits on Effective Radiated Power ("ERP"), to prevent co-channel interference among licensees.^{2/} An applicant generally cannot license a channel at a site if that channel is already licensed within a 70-mile radius of the proposed site.^{3/} Because the propagation of radio transmissions are impacted by terrain, natural and man-made obstructions, temperature, and other factors, the Commission has established varying interference protection criteria where necessary due to the locale's geography. For example, certain mountaintop sites in

^{2/} In cellular and PCS services, which are licensed on a geographic area basis, such interference protection is only required at the edge of their geographic services areas where they are likely to interfere with adjacent geographic area licensees.

^{3/} There are some exceptions to the 70-mile co-channel separation rule, including short spacing at reduced ERP and antenna height pursuant to Section 90.621(b) of the Commission's Rules, and greater co-channel separation requirements for stations located at specified high elevation sites in California and Washington State.

Southern California are given a greater co-channel separation (105 miles) than SMR stations located on lower terrain.^{4/} The unobstructed terrain at mountaintop sites results in transmission propagation for greater distances, thus requiring additional geographic separation among co-channel stations to protect against interference.

Operating 800 MHz and 900 MHz SMR systems over a body of water presents particular difficulties for protecting against co-channel interference with other water-based licensees as well as land-based licensees located along the shore. First, a body of water -- like a mountaintop site -- presents few, if any, obstacles to the radio transmission's path. This enables the radio signal to travel greater distances than it typically would on land where there are numerous natural and man-made obstacles, e.g., mountains, hills, valleys, buildings. Second, the moisture emanating from a body of water creates what is called a "duct" effect on the radio signal. This "duct" effect causes the signal to travel further, rather than dispersing or fading within typical distances.

Additionally, the type of end-user operating on Gulf-based SMR systems, e.g. large oil tankers, tug boats and other ships, creates increased co-channel interference potential since they operate special "enhanced" mobile equipment on their ships, and cruise in and out of the Gulf area and the Mississippi River. Because the mobile equipment is erected at very high sites on top of these large vessels and tend to be operated at higher ERP than land-based

^{4/} 47 C.F.R. Section 90.621(b).

mobiles, the mobile user can communicate with its tower site even though it may be well beyond the typical 20 dBu service contour. Nextel has experienced harmful interference from Gulf-based operations at a site north of New Orleans, many miles from the Gulf, because large tankers are able to operate on these water-based systems far beyond the typical 70-mile co-channel separation. Thus, when considering the necessary co-channel separation requirement for water-based co-channel operations, the end-user's "enhanced" operational capabilities must be considered.

Thus, given the flat, unobstructed terrain of the Gulf, the potential duct effect on radio transmissions over the water, and the additional considerations due to unique end-users, the Commission must ensure that 800 MHz and 900 MHz SMR licensees in the Gulf -- whether site-by-site or geographic area licensees -- do not interfere with co-channel operations on shore. Nextel's existing interference problems confirm that a 70-mile co-channel separation would not prevent interference from water-based systems to coastal land-based systems. Thus, Commission must impose a separation requirement greater than the general 70-mile rule to ensure an appropriate buffer between water-based and land-based co-channel licensees. Additionally, the Commission should impose restrictions on the height and ERP of water-based SMR systems in the Gulf, as well as potential limitations on the output power of SMR Gulf-based end-users.

These restrictions are critical to the provision of effective land-based SMR operations near the shore. The practical effect of

these separation requirements, however, may be to effectively prohibit re-use of any 800 MHz or 900 MHz SMR channel within the Commission's proposed Coastal Zone if that channel is in use at or near the shore. In fact, it is likely that channel re-use of existing licensed stations in much of the Exclusive Zone could be effectively precluded.

III. CONCLUSION

The Commission's proposal to license what has heretofore been known as Land Mobile Radio Operations in the Gulf of Mexico raises significant operational and technical concerns. If the Commission decides to license 800 MHz and 900 MHz SMRs within the Gulf -- particularly within only a few miles of the shore -- it must protect the operation of land-based systems by imposing strict co-channel separation requirements on the water-based operations.

Respectfully submitted,

NEXTEL COMMUNICATIONS, INC.

By



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Dated: June 2, 1997

CERTIFICATE OF SERVICE

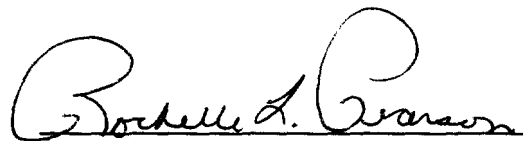
I, Rochelle L. Pearson, hereby certify that on this 2nd day of June, 1997, I caused a copy of the attached Comments of Nextel Communications, Inc. to be served hand delivery and first-class mail, postage prepaid to the following:

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